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ABSTRACT

The explicit goal of most educational information or resource centers, is to assist clients in obtaining and utilizing information to improve educational practice and aid in educational decision making. As the number of services has increased, the need to systematically assess them has become critical. Previous efforts have been limited and relatively simplistic. The Client Assessment Package (CAP) was designed to expand upon previous evaluation research by using a nationwide data base to delineate the significant interrelationships among the complex sets of variables which influence information utilization. Information utilization is defined as a stochastic process involving generalized and specific psychological states of the potential user, the organizational context in which the user is embedded, and the characteristics of the information and services provided. This paper described the Client Assessment Package, proposed data collection procedures, and proposed analyses of a nationwide client data base. A conceptual framework, developed to examine the interrelationships among the variables identified as contributing to information utilization, was composed of seven domains: (1) individual client characteristics; (2) institutional characteristics; (3) linker characteristics; (4) request characteristics; (5) process characteristics; (6) client satisfaction; and (7) service utliization. These variables are described as the basis for item generation for the five instruments which compose the CAP. (Author/JAC)

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Assessing Educational Information Services Through A Nationwide Data Base

Doren Madey Michael Everett

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Abstract

The explicit goal of most educational information or resource centers is to assist clients in obtaining and utilizing information to improve educational practice and aid educational decisionmaking. As the number of services have increased, the need to systematically assess them has become critical. Previous efforts have been limited and relatively simplistic. The Client Assessment Package (CAP) and its associated studies will expand upon previous evaluation research by using a nationwide data base to delineate the significant interrelationships among the complex set of variables which influence information utilization. In this study, information utilization is defined as a stochastic process involving generalized and specific psychological states of the potential user, the organizational context in which the user is embedded, and the characteristics of the information and services provided.

This paper describes the Client Assessment Package, proposed data collection procedures, and proposed analyses of a nationwide client data base. (Actual data will be collected and analyzed in the fall of 1978.) A conceptual framework developed to examine the interrelationships among the variables identified as contributing to information utilization is also presented.

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Introduction

An abysmal gap exists between educational theory and educational practice. The finest research, the most innovative solution to a practical problem, the best package of materials, will not affect education unless a system exists to link the practitioner to these innovations. It is unfortunate, but true, that the rapid growth of educational knowledge production in this country has not been accompanied by a parallel surge of educational knowledge utilization, innovation, and reform. Sidney P. Marland, Jr., Ex-Commissioner of Education, succinctly states the problem:

> "...More than one billion dollars in federal research and development expenditures have produced so little in the way of tangible results in our schools."[1]

A 1973 report by the National Institute of Education (NIE) echoes this despair:

> "Despite the notable achievement of the past decade of research, product development, evaluation, and dissemination, the schools are much as they have always been and not always by choice."[2]

Bridging the gap between production and utilization, or putting knowledge to use, has been the focus of many recent federal and state

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[1] Sidney P. Marland, Report on Educational Research, Washington, D.C.: U.S. Government Printing Office, December 8, 1971.

[2] National Institute of Education, Building Capacity For Renewal and Reform: An Initial Report on Knowledge Production and Utilization, Washington, D.C.: Office of Research and Development Resources, December, 1973, p. 6.

programming efforts.[3] Concomitant with the increasing thrust to put knowledge into use has been the desire to evaluate the effectiveness of the various approaches to knowledge utilization.[4] While federal support for Research and Development (R & D) is estimated at one percent of all federal education expenditures, federal support for educational knowledge production and utilization (KPU) represents 4.5 percent of all federal education expenditures (Mason and Nelson, 1977).

Knowledge utilization as a field of study has three major concerns: (1) to develop insights on the part of both knowledge producers and knowledge users into the underlying processes of knowledge development, dissemination, and implementation, (2) to identify factors that account for delay in adaption or adoption following the developmental stage, and (3) to generate strategies or measures for enhancing appropriate and timely utilization.[5] The Client Assessment Package (CAP) designed by NTS Research Corp. to assess the impact of educational information services should contribute to all three areas.

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[3] Recent education efforts include the National Institute of Education's State Capacity Building Program in Dissemination, the Research and Development Utilization Program, the Research and Development Exchange, and the Linkage Agent Training Program. The Office of Education also funds several dissemination programs for putting knowledge into use, inlcuding the National Diffusion Network and Project Information Packages.

[4] Each of the federal programming efforts identified in the preceeding footnote has its own evaluation. For example, NTS Research Corp. is conducting the Evaluation of the State Capacity Building Grants Program; Abt Associates is studying the R & D Utilization Program; and Stanford Research Institute has completed an evaluation of the National Diffusion Network.

[5] Putting Knowledge to Use: A Distillation of the Literature Regarding Knowledge Transfer and Change, Human Interaction Research Institute, Los Angeles, California: 1976 (in collaboration with National Institute of Mental Health).

The Client Assessment Package

The Client Assessment Package is comprised of five separate forms:

- Service Form
- Process Form
- Linker Form
- Client Immediate Feedback Form
- Client Assessment Form

The package is designed to meet individual information service and management needs as well as nationwide evaluation needs. Participating information services have been involved in the development and revision of CAP.

A few comments regarding flow are necessary before describing each instrument. The first form, the Service Form, is completed by the person whom the client first contacts (either a linker or, in some cases, a resource base staff member). The second form, the Process Form, is completed by the individual (a resource base person) who conducts the actual information search and retrieval process. The Linker Form is completed by each linker. The Client Immediate Feedback Form is completed by the client after receipt of the materials and personal assistance. The Client Assessment Form is completed by a subsample of these clients four to six weeks after receipt of the original package and assistance.

Service Form. This instrument will be completed by linkers. It is designed to either supplant existing management instrumentation or fill a service void. This eleven-item instrument is used to collect information concerning a client request for service including dates, problem statement, purpose statement, information area, grade level, time span, client position, status, and client location.

A unique code comprised of state, region, linker, and service numbers will be assigned to each request. In those states utilizing the NTS Client Assessment Package, the search can then be linked with client utilization and satisfaction data.

The purposes of this paper are to describe the instrumentation package, proposed data collection procedures, and the proposed analyses of a nationwide client data base. A conceptual framework developed to examine the interrelationships among the variables identified as contributing to information utilization is also presented.

Instrumentation

Rationale

The explicit goal of most educational information or resource centers is to assist clients in obtaining and utilizing information to improve educational practices and aid educational decisionmaking. As the number of services have increased, the need to systematically assess them has become critical. Previous efforts have been limited and relatively simplistic. Brickley and Trohoski (1974) and Sieber et al. (1972) have proposed or conducted important theoretical and empirical evaluation studies. Unfortunately these studies have focused only on descriptive data (e.g., a taxonomy of information users). Hood and Blackwell (1976) defined the needs, characteristics, and purposes of educators in terms of their actual potential use of educational information and attempted to relate such variables using a canonical correlation procedure. Louis (1977) examines the relationships between several types of variables and information utilization using a relatively small sample of 266 school-based educators.

The Client Assessment Package and its associated studies will expand upon previous evaluation research by using a nationwide data base to delineate the significant interrelationships among those variables which influence information utilization and to determine the relative importance of individual, organizational, information, and service variables for information utilization. Information utilization is defined as a multidimensional conundrum. It is a probability function of generalized and specific psychological states of the potential user, the organizational context in which the user is embedded, and the characteristics of the information and services provided.

Process Form. This single-page instrument will be completed by resource base personnel. The purpose of the instrument is to capture information about the information and/or resource search process in response to a service request. Assignment of an identifying service code will allow interface with the Service Form and the client utilization and satisfaction data.

Linker Form. The Linker Form is designed to gather information concerning the linker's expertise (content knowledge, educational level, experience and role functioning) and demographic information (linker's position, funding source). It will be completed one time by linkage agents and consists of eight items.

Client Immediate Feedback Form. This form will be completed by all those clients whose requests have been sampled. It consists of eleven brief items dealing with the information and/or assistance received (timeliness, relevancy, usefulness, completeness) and overall satisfaction (reuse of services, recommendation of services). This will be in postcard format.

Client Assessment Form. This is a longer form for obtaining client information, and will be given to a subsample of the clients who receive the Immediate Feedback Form. It examines the intensity of linker/client interactions, information utilization, client follow-up, and the need for information/assistance. In addition, there are four items which measure the client's innovative propensity, professionalism, and the climate of the client's organization.

For the Feedback Form and Client Assessment Form, a three-stage follow-up procedure is used to insure a desirable response rate (70-80%) from clients.

Data Collection

The initial data collection effort, an extended pilot, will entail a fifteen state sample, with proportional sampling within states. The envisioned sample size is approximately 1730 data sets, or clients. The client samples for states involved in the extended pilot are indicated

in Table 1. Knowledge gained during the extended pilot will be used to modify procedures for the full-scale data collection. In addition to those states involved in the extended pilot, some other service agencies (e.g., Research and Information Services for Education; RISE) have indicated a desire to use the instrumentation package in order to contribute to the development of a nationwide data base.

Table 1. Client Samples for the Extended Pilot

STATE	UNIVERSE OF CLIENTS[1]	SAMPLE OF CLIENTS FOR EXTENDED[2] PILOT
Alabama	150	50
Alaska	400	100
California	150	50
Florida	35	35
Georgia	85	40
Idaho	350	150
Illinois	540	180
Kansas	1250	300[3]
Minnesota	200	100
Montana	300	100
New York	2500	300[3]
Oregon	65	65
S. Carolina	180	60
Texas	600	200

[1]These are upper bound estimates based upon three months for the extended pilot period.

[2]The number in this column represents the number of complete sets. Service Form, Process Form, Immediate Feedback Form and Client Assessment Form will be collected for each client in the sample.

[3]These figures were stipulated by Kansas and New York.

Conceptual Framework

There are various formulations of what constitutes a conceptual framework (Stenner, 1974; Scriven 1974; Stufflebeam, 1974). Our view is that a conceptual framework initially acts as a heuristic device or data organizer. In this sense it is composed of various study domains and subsets of variables laid out in a logical or initial "best guess" sequence. This initial framework guides data collection and analytic procedures. Initial analyses allow an empirical refinement of the framework, resulting in one or more conceptual models which have explanatory or inferential powers (cf. Blalock, 1971).

The following CAP framework consists of variables in part gleaned from the literature and in part obtained from extensive consultations with practitioners in the field. These variables formed the basis for item generation for the Client Assessment Package and may be grouped into the following seven study domains:

- individual client characteristics
- organizational characteristics
- linker characteristics
- request characteristics
- process characteristics
- client satisfaction
- service utilization.

Each variable set with concomitant literature is explicated in this section.

Individual Characteristics

Much literature characterizes educational practitioners, especially teachers, as conservative, resistant and hostile to change, and satisfied with the status quo (Van Wyck, 1971; Miller, 1974; Engel, 1974; Heichberger, 1974). Users and nonusers are discussed by Corwin (1975), Leithwood and Russel (1973), Sieber (1976), Shane (1973), and Berman et al. (1975). Variables generated via these studies lump into two broad categories: demographic and psycho/social.

Contradictory results are found in the empirical literature regarding demographic variables. For example, Corwin (1973) found that educational background, experience, and the proportion of male teachers were all associated with a tendency to embrace new programs. Louis (1977) found that standard background variables (age, professional status, and career history) did not relate to information utilization. In addition, Brickley and Trohoski (1974) indicated that neither information topic nor format predicted distribution across role types (i.e., teacher, counselor, administrator).

Several demographic variables are included in the Client Assessment Package for three reasons. First, their importance, especially as related to the other domains at this level and toward information utilization, is not clearly known at this time. Second, such data is easily and efficiently gathered. Third, projects need this information to accurately define their extant client base. Therefore, client position, experience, and educational background will be included in the Client Assessment Package.

Psycho/social variables have only recently been researched in any systematic manner.[6] Louis (1977) found that social integration significantly correlated with utilization. This is operationalized in this study in terms of different categories of role partners with whom either the need for information or the actual information is discussed. A second variable, professionalism, was suggested by Louis in a consultant role to NTS. This includes such indicants as recent educational update experiences, books or journals read, or professional organization membership. A third variable was logically generated to look at an individual's general attitude toward change. It consists of several likert-type items (e.g., most attempts to change school today usually make education worse; there is too much faddism in education today), and is termed innovative propensity.

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[6]Although psychological literature on attitude change and behavioral change could be utilized to generate a wide variety of variables.

Organizational Characteristics

The change literature states that organizational characteristics are a major determinant of information utilization. Early change studies concluded that organizational or system effects might be as important in explaining individual innovativeness as individual characteristics. For example, many authors find the organization within which practitioners work to be resistant to change and oriented to the status quo (Abbott, 1969; Granito, 1972; Becker, 1973; Shane, 1973; Trump, 1974; and Giacquinta, 1973).

Numerous organizational variables have been proposed by researchers as perhaps impinging upon information utilization. Fullan and Pomfret (1977) discuss four categories of characteristics of the adopting unit in their review of implementation. Two clusters are pertinent here: demographic variables, and the previously mentioned organizational climate variables. Demographic or structural variables include school wealth, level of pupil/teacher ratio, dropout rate, size, and staff age patterns (cf. Berman and McLaughlin, 1974, p. 29). Standard demographics are also pertinent; for example, urban-rural differences have been found regarding utilization (House, 1974) with a higher degree of implementation in urban areas. The second cluster, organizational climate, includes such variables as innovative propensity (previous experiences with innovations in terms of nature and number), the locus of decisionmaking, administrative support (Evans and Scheffler, 1974), leadership styles, and research and development capacity (Berman and McLaughlin, 1974).

Organizational characteristics have been conceptualized as affecting or mediating user motivation, and/or actual usage. Due to the nature of the study, large-scale validated indices of organizational climate are not collectible, however, those aspects of climate which lie within the phenomenology of the client are obtainable. Variables thus addressed under organizational climate in the Client Assessment Package are limited to perceptions of innovative propensity, locus of decisionmaking, and administrative support.[7]

[7] In-depth studies are necessary to collect data on other variables or from sources other than clients; such studies need preliminary data for justification and design. The package will be subject to modifications and revisions following completion of the pilot.

Linker Characteristics

This domain includes demographic information about individual linkers, such as their position. Louis and Sieber (1976) discuss the interrelationship of the linker and client positions. Linker expertise, as rated by clients, has been found to be significantly related to information utilization (Louis, 1977). Included in this study are the variables of educational background, experience, content knowledge, and general role functioning. The latter is based upon Paisley and Butler's (in press) three-faceted conceptualization of linkage agents.

Request Characteristics

There is a dearth of literature in this area. Brickley and Trohoski (1974) discuss user needs, but in relationship to resource base acquisition. Louis (1977) presents a variable of motivation which is composed of urgency of request and fit of request to an ongoing program of change within the school. She found motivation to be significantly correlated to use. Visibility of payoff is also mentioned by Louis[8], but not measured.

The following conceptualization or grouping of request characteristics is used in this study. First, payoff (as perceived on an a priori basis by the client) is considered to be a function of urgency of need and of purpose of request (e.g., organizational, personal). Type of request refers to the original problem specification, content area, and educational level for which the information is desired.

Process Characteristics

Variables under this category are oriented toward four aspects of service processes. First are the information base processes; the range of information resources searched, and the type and amount of information provided to the requester. Second are client processes; other client information-seeking efforts, any client repeat usage, and the extent to which clients review and study materials. Third are linkage activities; the intensity of linker services and type of personal assistance. These latter variables have been found critical by Emrick and Peterson (1977) and Louis (1977).

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[8]Noted is the relationship between product visibility and rate of diffusion.

The fourth set of process characteristics are analytically derived and are essentially "match" variables. That is, part of service provision processes involve the match between linker and client characteristics (i.e., how similar they are in terms of position, educational background, and experience) and between linker and request characteristics (i.e., similarities between the content area of the request and the content knowledge of the linker). It may be hypothesized that similarities on these dimensions are positively related to at least client satisfaction and, hopefully, service utilization.

Client Satisfaction

Client satisfaction is determined via three elements. First are ratings of the information provided. Literature concerning characteristics of innovations in general provide a useful basis from which to draw upon in this area. Good discussions may be found in Moore and Mizuba (1969); Fliegel and Kivlin (1966); Orlosky and Smith (1972); Piele (1975); Hall and Alford (1976); and Zaltman and Lin (1971). Variables considered important herein are information relevancy (the extent to which the information is perceived as direct and apparent in satisfying the original need), novelty (the extent to which the information is new and different), acceptability (the extent to which the information is likely to meet resistance due to difference from previous beliefs or controversiality), completeness (the degree to which the information does not need additions to satisfy the original need) and the timeliness of information (cf. Brickley and Trohoski, 1974). Second is the value of personal assistance. Herlig (1973), Sieber et al. (1974) and Mojkowski and Mellor (1974) all found generally positive results from following linkage strategies. Louis (1977) asked clients to rate linker performance on nine dimensions, and found linker expertise to be significantly related to both satisfaction and utilization. These variables are extremely pertinent for this study. Third, two more subjective measures of satisfaction have been utilized previously. Sieber et al. (1972) presents them most clearly as "plans to use the service again" and "recommendation of the service to others." These three elements - characteristics of the information, personal assistance, and subjective satisfaction - comprise user satisfaction.

Service Utilization

Louis (1977) discusses measurement of subjective usefulness and objective usefulness. Sieber and Louis (1972) rated usefulness on a four point scale (nonusers, readers, planners, and implementors). Sieber et al. (1972) used a five category scale. More recently, Hall and Loucks (1976) have identified and operationally defined eight Levels of Use (LoU) of an innovation at the client level. Sieber's (1972) levels of use are considered to be the most viable for purposes in this study. The client will be asked to describe in detail the actual use to which the information and services were put. These will later be coded into Sieber's five categories: (1) a specific practice or program was implemented; (2) vague response indicating that some implementation occurred; (3) used for planning or proposal writing; (4) the material was read, but no specific use was made of it; and (5) negative comment about the material. Sieber et al. (1972) found the following "use" percentages for each category in their three state sample (n = 536):

Category	Percent Reporting Use
1	9%
2	10%
3	22%
4	49%
5	9%

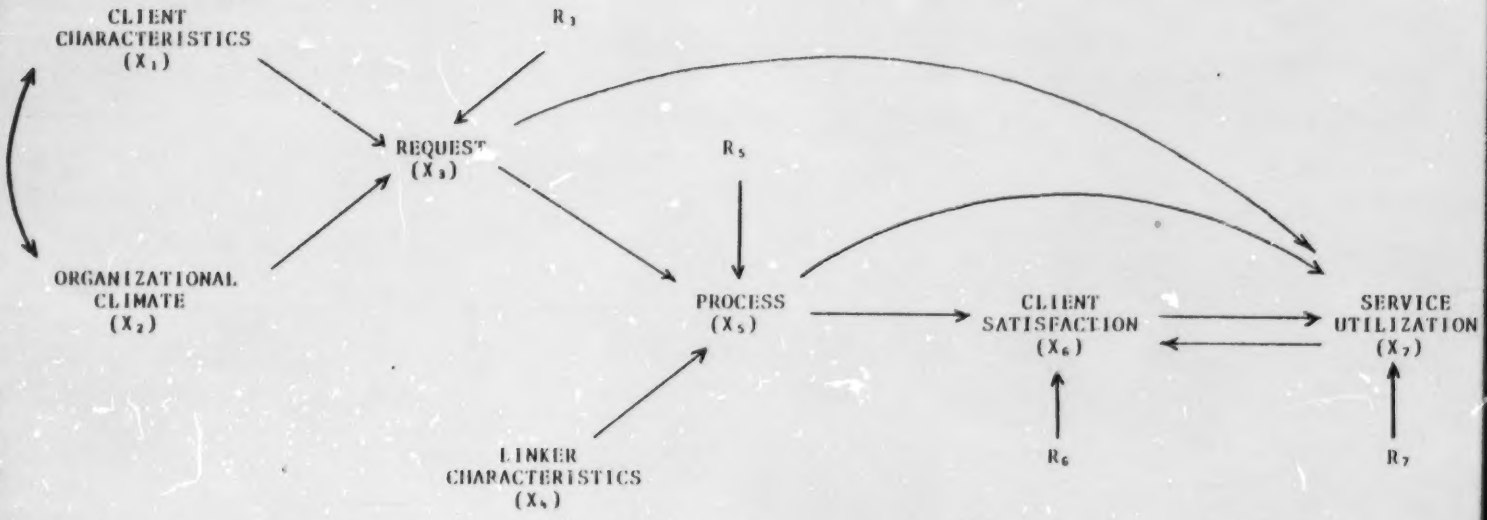
Thus, this scale should provide adequate reliability and variance for analytic purposes.

Graphic Representation of Conceptual Framework

In a previous section of this paper, we stated that service utilization is a probability function of generalized and specific psychological states of the potential user, the organizational context in which the user is embedded, and the characteristics of the information and services provided. In other words, it is a stochastic process involving many variable realationships. Causal inferences implied in fitting together the variables in the seven study domains may involve reciprocal links and/or feedback. These considerations lead to the formulation of the conceptual framework diagram which is presented in Figure 1.

Figure 1 Client Assessment Package

Conceptual Framework



Note: DIRECT AFFECTS ARE INDICATED

Xi = VARIABLE SETS

Ri = RESIDUALS

The variables in the seven sets described above are included in outline form in Figure 2 to facilitate an understanding of the conceptual framework.

In the conceptual framework presented in Figure 1, reciprocal or feedback links are noted in the case of Client Satisfaction (X_6) and Service Utilization (X_7) variables.[9] It is not logical to assume only that satisfaction effects utilization; the obverse is also conceivable (cf. Anderson, 1978). All other relationships are assumed to be unidirectional with respect to causality (e.g., Request Characteristics are a function of Client Characteristics and not reciprocally). The double arrow between Client Characteristics and Organizational Climate indicates that these two sets of exogneous variables are correlated, but no attempt is made to explain any such covariation, and the linkage is left ambiguous (Kim and Kohout, 1975).

The assumptions explicit in the conceptual framework are relatively straightforward. Direct effects are provided by the following equations and statements:

(1) $X_7 = f(X_3 + X_5 + X_6 + R_7)$

(2) $X_6 = f(X_5 + X_7 + R_6)$

(3) $X_5 = f(X_3 + X_4 + R_5)$

(4) $X_3 = f(X_1 + X_2 + R_3)$

(5) X_1, X_2, X_4 are exogenous or given;

(where R_i is the residual, or unexplained, causation and X_i are the variable sets). The combination of these equations also makes it evident that indirect effects are hypothesized. For example, organizational climate variables (X_2) may follow three "paths":

(6) $X_2 \rightarrow X_3 \rightarrow X_7$

(7) $X_2 \rightarrow X_3 \rightarrow X_5 \rightarrow X_7$

(8) $X_2 \rightarrow X_3 \rightarrow X_5 \rightarrow X_6 \rightarrow X_7$

These all represent possible indirect influences of X_2 variables on X_7. Both of these types of effect, direct and indirect, will be empirically delineated via the data analysis procedures described in the next section.

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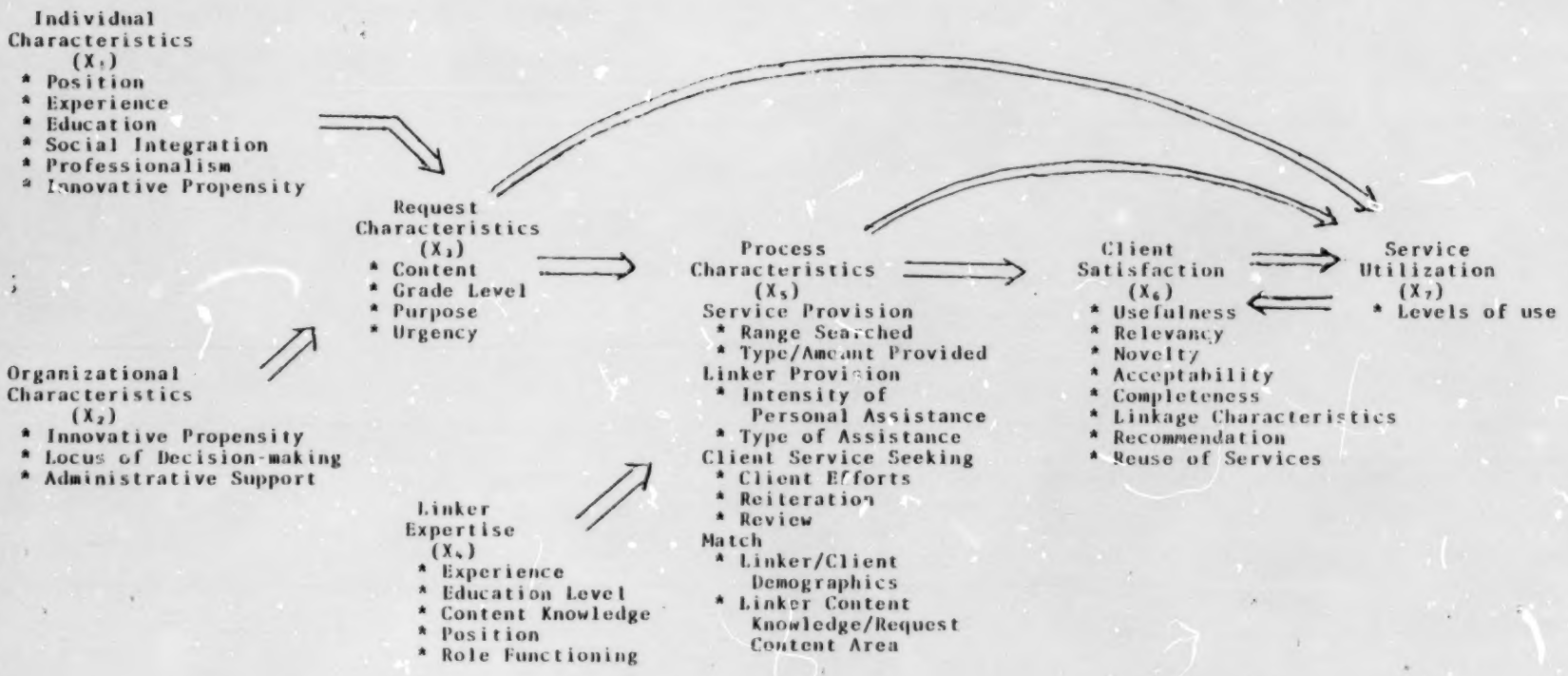
[9] A causal model is said to be recursive if all the causal links are one way, and nonrecursive otherwise (Duncan, 1975).

Figure 2 Variables in the Client Assessment Package



Data Analyses

Descriptive

Descriptive data summaries will be generated for each of the variable sets delineated and presented in narrative and tabular formats.

Structural Equations

Recursive and nonrecursive linear modeling will be utilized to examine the interrelationships among variables. This is essentially an extension of path analysis which is built upon sets of multiple linear regression equations. Procedures are outlined in Duncan (1975), Heise (1975), and Namboodiri, Carter, and Blalock (1975). Recursive analysis procedures, for equations (3) and (4) above, involve ordinary least squares analysis since the equations are always just identified or overidentified (Anderson, 1978). However, in the nonrecursive equations (1) and (2) above, the residual causation will be correlated with one of the explanatory variables (i.e., in (2), R_6 and X_7 will be correlated since X_7 is also a function of X_6). This introduces possible bias if ordinary least square analyses are utilized. Therefore, recommended are indirect least squares solutions for just identified equations (Anderson, 1978) and two-stage least square solutions for overidentified equations (Heise, 1975). The latter solution will be used herein due to overidentified equations.

Reduced Form

The set of equations which define the structural model may be reduced so that endogenous variables are all a function of exogenous variables and residuals. Equation (4) above is already in reduced format since it is a function only of exogenous variables. Equation (1), (2), and (3) could be written in reduced form, which would then indicate how exogenous variables (individual, organizational, and linker characteristics) directly and indirectly affect endogenous variables (process characteristics, user satisfaction, and service utilization). After Anderson (1978), two matrices are formed; ρ containing the coefficients of the exogenous variables, and β containing the coefficients of the endogenous variables; then π containing the reduced form coefficients is given by multiplying the product of the first two matrices by the scalar -1, thus $\pi = \beta^{-1}\rho$. These reduced form coefficients then indicate indirect effects; that is, effects through intervening variables.

Example

These types of coefficients and their meaning may be clarified by using an example. Suppose the following results were obtained from (1) above. arbitrarily selecting one variable from each set:

service utilization (x_7) = .21 information relevance (x_6) + .61 intensity of personal assistance (x_5) + .32 purpose of request (x_3) + R_7

also assume from (4) above the following results occurred:

purpose of request (x_3) = .32 social integration (x_1) + -.12 locus of decisionmaking (x_2) + R_3

These coefficients are standardized partial regression coefficients and interpreted as such. Locus of decisionmaking (x_2) then has an effect upon service utilization (x_7) <u>through</u> the purpose of request (x_3). The magnitude of this latter indirect effect will be less than the zero order correlation of the two variables.[10]

Study Perspectives

Our biases are evident, but it is felt that important advantages will accrue by using the procedures described herein. Advantages will be in terms of policy analysis, theoretical issues, and methodological problems.[11] <u>Policy or management</u> implications are manifest and manifold. First, descriptive data might allow certain projections to be made: for example, extant client information could lead to projections of typologies of nonusers, with the latter designing of specialized efforts to "reach" these nonusers. Likewise, extant request information would make it possible to prepackage information in frequent or "hot topic" areas. Second, an understanding of the direct and indirect

[10] For example, Anderson (1978) found a zero order correlation of .75 between ethnicity and self concept, while the indirect effect of ethnicity on self concept was only .06 through the variable of activism-mastery.

[11] These are not necessarily disjoint.

influences on client staisfaction and concomitant information utilization would allow fruitful manipulations to be made, as part of the ongoing process of service provision. For example, if linker/client demographic match has high explanatory power toward satisfaction and utilization, an effective linkage system would maximize this match given a particular client. Theoretically, this study will delineate the magnitude of three vital types of causation - direct, indirect, and residual. Previously found significant effects in the literature may wane when analyzed in terms of an indirect effect, similar to Anderson's (1978) results concerning ethnicity and self concept. Also, the focus herein on the organizational characteristics solely from the phenomenology of the client may allow for interesting conclusions. Methodologically, these procedures will result in small sampling errors with more confidence given to analytic results. Also, more complex modeling is possible, given the sample size, which might involve more complex feedback links and more insight into the process of information utilization.

Thus it is felt that the perspectives involved in this study will lend empirical conclusions toward the three major concerns of knowledge utilization as a field of study as discussed earlier: (1) developing insights on the part of both knowledge producers and knowledge users into the underlying processes of knowledge development, dissemination, and implementation, (2) identifying factors that account for delay in adaption or adoption following the development stage, and (3) generating strategies or measures for enhancing appropriate and timely utilization.

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